

DETERMINING THE CONCENTRATION OF DIPHENHYDRAMINE IONS IN AQUEOUS SOLUTION BY DIPHENHYDRAMINE SELECTIVE ELECTRODE.

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Introduction. In recent years, for electro active substances widely used heteropoly (GPA) Keggin's structure having the general formula: $HMe_{12}O^{n-}_{40}$, where X - central atom (P, Si) E - metal ion (Mo (VI), W (VI)). SBS with organic cations to form sparingly soluble in water but soluble in organic solvents compound. This allows their use in plasticized membranes ion-selective electrodes (ISE). As plasticizers we have used dibutyl phthalate (DBP) or dioctyl phthalate (DOP) in the preparation of membranes.

Aim. We found that the best electro analytical properties has an electrode containing plasticized membrane as electro active substance ionic associate with diphenhydramine phosphorustungstate ($PW_{12}O^{3-}_{40}$), as well as a plasticizer - DOP.

Materials and methods. The method is based on use of two standard solutions of the drug, which is in the range of concentration of the solution was analyzed. EMF measurement circuit (1) was performed with a digital I-130 ionomer. As the reference electrode use a saturated silver chloride electrode. First, the first measured EMF E_1 standard drug solution C_1 at a concentration less than the concentration of the solution was analyzed C_A . Thereafter, the solution was analyzed by EMF, E_A . Finally, the measured EMF in the second standard solution with a concentration C_2 , which is greater than the C_A (C_1 and C_2 are selected so that the $C_2 / C_1 = 10$). Calculate the slope of the electrode function ISE, in the accepted range of concentrations of standard solutions: $S = E_2 - E_1$. Find the difference voltage (ΔE) between EMF (E_A) and EMF (E_2): $\Delta E = E_A - E_2$.

Results and discussion. Aqueous solutions diphenhydramine different concentrations (from $5.0 \cdot 10^{-4}$ to $5.0 \cdot 10^{-3}$ M), and the two standard solutions with concentrations of diphenhydramine $C_1 = 5.0 \cdot 10^{-4}$ M, and $C_2 = 5.0 \cdot 10^{-3}$ M.

Ionometric proposed method based on the use of the developed ion-selective electrode to determine diphenhydramine in aqueous solution with an uncertainty not exceeding 1.38%.

Conclusions. Diphenhydramine selective electrode and ionometrical developed methods for the determination of the drug suitable for the purposes of the pharmaceutical and chemical-toxicological analysis.